

WEST Search History

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DATE: Monday, February 09, 2004

Hide?	Set Name	Query	Hit Count
<i>DB=EPAB,JPAB,DWPI; PLUR=YES; OP=ADJ</i>			
<input type="checkbox"/>	L10	L9 not l7	1
<input type="checkbox"/>	L9	L8 and absorption and maxim\$3	2
<input type="checkbox"/>	L8	optical and (trap\$4 or tweezer)	1908
<input type="checkbox"/>	L7	L5 and (absorption same maxim\$3)	1
<input type="checkbox"/>	L6	L5 and (absorption near2 maxim\$3)	0
<input type="checkbox"/>	L5	optical same (trap\$4 or tweezer)	1218
<i>DB=PGPB,USPT; PLUR=YES; OP=ADJ</i>			
<input type="checkbox"/>	L4	L1 same (absorption near2 maxim\$3)	6
<input type="checkbox"/>	L3	L2 same maxim\$3	6
<input type="checkbox"/>	L2	L1 same absorption	72
<input type="checkbox"/>	L1	optical near2 (trap\$4 or tweezer)	802

END OF SEARCH HISTORY

* * * * * STN Columbus * * * * *

FILE 'HOME' ENTERED AT 14:49:18 ON 09 FEB 2004

=> index bioscience

FILE 'DRUGMONOG' ACCESS NOT AUTHORIZED

COST IN U.S. DOLLARS

SINCE FILE	TOTAL
ENTRY	SESSION
0.21	0.21

FULL ESTIMATED COST

INDEX 'ADISCTI, ADISINSIGHT, ADISNEWS, AGRICOLA, ANABSTR, AQUASCI, BIOBUSINESS, BIOCOMMERCE, BIOSIS, BIOTECHABS, BIOTECHDS, BIOTECHNO, CABA, CANCERLIT, CAPLUS, CEABA-VTB, CEN, CIN, CONFSCI, CROPB, CROPU, DISSABS, DDFB, DDFU, DGENE, DRUGB, DRUGMONOG2, ...' ENTERED AT 14:49:42 ON 09 FEB 2004

68 FILES IN THE FILE LIST IN STNINDEX

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=> s optical (2a) (trap#### or tweezer)

8	FILE AGRICOLA
19	FILE ANABSTR
9	FILE AQUASCI
8	FILE BIOBUSINESS
3	FILE BIOCOMMERCE
550	FILE BIOSIS
18	FILE BIOTECHABS
18	FILE BIOTECHDS
136	FILE BIOTECHNO
19	FILE CABA
9	FILE CANCERLIT
2870	FILE CAPLUS
12	FILE CEABA-VTB
12	FILE CEN
2	FILE CIN
27	FILE CONFSCI
2	FILE CROPU
156	FILE DISSABS
8	FILE EMBAL
343	FILE EMBASE
273	FILE ESBIODBASE
103	FILE FEDRIP
2	FILE FROSTI

37 FILES SEARCHED...

2	FILE FSTA
3	FILE GENBANK
204	FILE IFIPAT
219	FILE JICST-EPLUS
96	FILE LIFESCI
8	FILE MEDICONF
452	FILE MEDLINE
125	FILE NTIS
2	FILE OCEAN
1105	FILE PASCAL
1	FILE PHIN
111	FILE PROMT
1939	FILE SCISEARCH
131	FILE TOXCENTER
697	FILE USPATFULL
34	FILE USPAT2
194	FILE WPIDS

67 FILES SEARCHED...

194	FILE WPINDEX
-----	--------------

41 FILES HAVE ONE OR MORE ANSWERS, 68 FILES SEARCHED IN STNINDEX

L1 QUE OPTICAL (2A) (TRAP#### OR TWEEZER)

=> s absorp##### (3a) maxim###

11	FILE ADISCTI
8	FILE ADISINSIGHT
6	FILE ADISNEWS
231	FILE AGRICOLA
404	FILE ANABSTR
383	FILE AQUASCI
194	FILE BIOBUSINESS
4560	FILE BIOSIS
179	FILE BIOTECHABS
179	FILE BIOTECHDS
776	FILE BIOTECHNO
801	FILE CABA
171	FILE CANCERLIT
40735	FILE CAPLUS
76	FILE CEABA-VTB
9	FILE CEN
11	FILE CIN
3	FILE CONFSCI
2	FILE CROPB
56	FILE CROPU
429	FILE DISSABS
6	FILE DDFB
241	FILE DDFU
70	FILE DGENE
6	FILE DRUGB
1	FILE IMSDRUGNEWS
859	FILE DRUGU
3	FILE IMSRESEARCH
15	FILE EMBAL
2578	FILE EMBASE
936	FILE ESBIODBASE
28	FILE FEDRIP
101	FILE FROSTI
102	FILE FSTA

38 FILES SEARCHED...

11	FILE HEALSAFE
2064	FILE IFIPAT
1266	FILE JICST-EPLUS
29	FILE KOSMET
955	FILE LIFESCI
2739	FILE MEDLINE
259	FILE NIOSHTIC
290	FILE NTIS
99	FILE OCEAN
3085	FILE PASCAL
1	FILE PHAR
8	FILE PHIN
338	FILE PROMT
131	FILE RDISCLOSURE
5106	FILE SCISEARCH
1245	FILE TOXCENTER
15619	FILE USPATFULL
578	FILE USPAT2
19	FILE VETU
3795	FILE WPIDS
3795	FILE WPINDEX

55 FILES HAVE ONE OR MORE ANSWERS, 68 FILES SEARCHED IN STNINDEX

L2 QUE ABSORP##### (3A) MAXIM###

=> s l1 (1) l2

2 FILE CAPLUS
39 FILES SEARCHED...
1 FILE PROMT
27 FILE USPATFULL
1 FILE USPAT2
67 FILES SEARCHED...

4 FILES HAVE ONE OR MORE ANSWERS, 68 FILES SEARCHED IN STNINDEX

L3 QUE L1 (L) L2

=> d rank

F1 27 USPATFULL
F2 2 CAPLUS
F3 1 PROMT
F4 1 USPAT2

=> file f3-4

COST IN U.S. DOLLARS	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	3.42	3.63

FILE 'PROMT' ENTERED AT 14:53:01 ON 09 FEB 2004
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FILE 'USPAT2' ENTERED AT 14:53:01 ON 09 FEB 2004
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=> s l3

L4 2 L3

=> dup rem l4

PROCESSING COMPLETED FOR L4
L5 2 DUP REM L4 (0 DUPLICATES REMOVED)
ANSWER '1' FROM FILE PROMT
ANSWER '2' FROM FILE USPAT2

=> file caplus promt

COST IN U.S. DOLLARS	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	2.12	5.75

FILE 'CAPLUS' ENTERED AT 14:53:47 ON 09 FEB 2004
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=> s l3

L6 3 L3

=> dup rem l6

PROCESSING COMPLETED FOR L6
L7 3 DUP REM L6 (0 DUPLICATES REMOVED)
ANSWERS '1-2' FROM FILE CAPLUS
ANSWER '3' FROM FILE PROMT

=> d bib abs 1-3

L7 ANSWER 1 OF 3 CAPLUS COPYRIGHT 2004 ACS on STN

AN 1981:558967 CAPLUS
 DN 95:158967
 TI Comparison of photoconductivity and optical spectra for trapped electrons in alcohol and amine glasses
 AU Kato, Noriyuki; Akiyama, Koichi; Fueki, Kenji
 CS Fac. Eng., Nagoya Univ., Nagoya, Japan
 SO Journal of Physical Chemistry (1981), 85(21), 3087-9
 CODEN: JPCHAX; ISSN: 0022-3654
 DT Journal
 LA English
 AB The photocond. and optical spectra of trapped electrons were measured at 77 K for glassy alcs. (MeOH + 5% H2O, EtOH, 1-propanol, 1-butanol, and 2-propanol) and amines (diisopropylamine and 1,2-propanediamine). From comparison of both spectra, the optical spectrum was assigned to bound-bound and bound-free transitions for all of the matrixes studied. Excitation energies at the photocond. and optical **absorption maximum** are correlated with matrix polarity. Such a correlation was interpreted in terms of a trapped-electron model.

L7 ANSWER 2 OF 3 CAPLUS COPYRIGHT 2004 ACS on STN
 AN 1963:6234 CAPLUS
 DN 58:6234
 OREF 58:1008c-d
 TI Color centers in a cerium-containing silicate glass
 AU Stroud, Jackson S.
 CS Corning Glass Works, Corning, NY
 SO Journal of Chemical Physics (1962), 37, 836-41
 CODEN: JCPSA6; ISSN: 0021-9606
 DT Journal
 LA Unavailable
 AB X-ray irradiation of glass containing 75 weight % SiO2, 25 weight % Na2O, produces color centers which absorb visible light. Ce in the glass prevents the formation of these centers. The nature of the centers and the mechanism by which Ce prevents their formation are studied by measuring the optical absorption changes caused by irradiation of glasses containing small concns. of Ce+++ and Ce4+. In Ce-free glass, **trapped holes** cause **optical absorption bands** with **maximum** near 4400 and 6200 A. By capturing holes, Ce+++ inhibits the formation of these 2 bands. The probability that a hole escapes capture by Ce+++ is $\exp(-v3c3)$, where c3 is the Ce+++ concentration and $v3 = (9 \pm 2) \times 10^4$ cu. A. Trapped electrons cause an optical absorption band that has a maximum in the ultraviolet and that extends to 6000 A. in the visible. Ce4+ inhibits the formation of this band by capturing electrons.

L7 ANSWER 3 OF 3 PROMT COPYRIGHT 2004 Gale Group on STN
 AN 2000:57338 PROMT
 TI Manufacturers and Suppliers. (Alphabetical list of companies)
 SO Lasers & Optonics, (Nov 1999) Vol. 18, No. 11, pp. S8.
 ISSN: 0892-9947.
 PB Cahners Publishing Company
 DT Newsletter
 LA English
 WC 71777
 FULL TEXT IS AVAILABLE IN THE ALL FORMAT
 AB A
 THIS IS THE FULL TEXT: COPYRIGHT 1999 Cahners Publishing Company
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=> index bioscience

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 COST IN U.S. DOLLARS

SINCE FILE

TOTAL

	ENTRY	SESSION
FULL ESTIMATED COST	18.92	24.67
DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)	SINCE FILE	TOTAL
	ENTRY	SESSION
CA SUBSCRIBER PRICE	-1.39	-1.39

INDEX 'ADISCTI, ADISINSIGHT, ADISNEWS, AGRICOLA, ANABSTR, AQUASCI, BIOBUSINESS, BIOCOMMERCE, BIOSIS, BIOTECHABS, BIOTECHDS, BIOTECHNO, CABA, CANCERLIT, CAPLUS, CEABA-VTB, CEN, CIN, CONFSCI, CROPB, CROPU, DISSABS, DDFB, DDFU, DGENE, DRUGB, DRUGMONOG2, ...' ENTERED AT 14:55:14 ON 09 FEB 2004

68 FILES IN THE FILE LIST IN STNINDEX

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=> s optical (1) (trap#### or tweezer)

29	FILE AGRICOLA
80	FILE ANABSTR
51	FILE AQUASCI
11	FILE BIOBUSINESS
3	FILE BIOCOMMERCE
798	FILE BIOSIS
37	FILE BIOTECHABS
37	FILE BIOTECHDS
203	FILE BIOTECHNO
87	FILE CABA
22	FILE CANCERLIT
10432	FILE CAPLUS
30	FILE CEABA-VTB
99	FILE CEN
5	FILE CIN
52	FILE CONFSCI
1	FILE CROPB
22	FILE CROPU
818	FILE DISSABS
1	FILE DDFU
155	FILE DGENE
9	FILE DRUGU
9	FILE EMBAL
605	FILE EMBASE
419	FILE ESBIODBASE
189	FILE FEDRIP
9	FILE FROSTI
15	FILE FSTA
3	FILE GENBANK
1227	FILE IFIPAT
791	FILE JICST-EPLUS
2	FILE KOSMET
186	FILE LIFESCI
9	FILE MEDICONF

46 FILES SEARCHED...

745	FILE MEDLINE
7	FILE NIOSHTIC
809	FILE NTIS
28	FILE OCEAN
4052	FILE PASCAL
1	FILE PHIC
10	FILE PHIN
1114	FILE PROMT
55	FILE RDISCLOSURE
5561	FILE SCISEARCH
467	FILE TOXCENTER
29032	FILE USPATFULL

1565 FILE USPAT2
1 FILE VETU
1041 FILE WPIDS
1041 FILE WPINDEX

50 FILES HAVE ONE OR MORE ANSWERS, 68 FILES SEARCHED IN STNINDEX

L8 QUE OPTICAL (L) (TRAP#### OR TWEEZER)

=> s 18(1)12

3 FILE BIOSIS
1 FILE BIOTECHNO
95 FILE CAPLUS
3 FILE DISSABS
1 FILE DRUGU
3 FILE EMBASE
1 FILE ESBIODASE

38 FILES SEARCHED...

1 FILE LIFESCI
2 FILE MEDLINE
3 FILE NTIS
6 FILE PASCAL
3 FILE PROMT
4 FILE RDISCLOSURE
18 FILE SCISEARCH
1 FILE TOXCENTER
712 FILE USPATFULL
41 FILE USPAT2
1 FILE WPIDS

67 FILES SEARCHED...

1 FILE WPINDEX

19 FILES HAVE ONE OR MORE ANSWERS, 68 FILES SEARCHED IN STNINDEX

L9 QUE L8(L) L2

=> s optical (s) (trap#### or tweezer)

27 FILE AGRICOLA
80 FILE ANABSTR
50 FILE AQUASCI
11 FILE BIOBUSINESS
3 FILE BIOCOMMERCE
606 FILE BIOSIS
37 FILE BIOTECHABS
37 FILE BIOTECHDS
203 FILE BIOTECHNO
85 FILE CABA
22 FILE CANCERLIT
5745 FILE CAPLUS
30 FILE CEABA-VTB
29 FILE CEN
3 FILE CIN
52 FILE CONFSCI
1 FILE CROPB
14 FILE CROPU
528 FILE DISSABS
1 FILE DDFU
155 FILE DGENE
7 FILE DRUGU
9 FILE EMBAL
605 FILE EMBASE
419 FILE ESBIODASE
208* FILE FEDRIP
9 FILE FROSTI
15 FILE FSTA

3 FILE GENBANK
 811 FILE IFIPAT
 532 FILE JICST-EPLUS
 2 FILE KOSMET
 185 FILE LIFESCI
 8 FILE MEDICONF

46 FILES SEARCHED...

544 FILE MEDLINE
 7 FILE NIOSHTIC
 739 FILE NTIS
 27 FILE OCEAN
 3258 FILE PASCAL
 5 FILE PHIN
 327 FILE PROMT
 49 FILE RDISCLOSURE
 5244 FILE SCISEARCH
 249 FILE TOXCENTER
 5044 FILE USPATFULL
 275 FILE USPAT2
 1 FILE VETU
 719 FILE WPIDS
 719 FILE WPINDEX

49 FILES HAVE ONE OR MORE ANSWERS, 68 FILES SEARCHED IN STNINDEX

L10 QUE OPTICAL (S) (TRAP#### OR TWEEZER)

=> s l10(l)l2 not l3

1 FILE BIOTECHNO
 35 FILE CAPLUS
 2 FILE DISSABS

26 FILES SEARCHED...

1 FILE DRUGU
 3 FILE EMBASE
 1 FILE ESBIODASE
 0* FILE FEDRIP
 1 FILE LIFESCI
 3 FILE NTIS

50 FILES SEARCHED...

6 FILE PASCAL
 3 FILE RDISCLOSURE
 18 FILE SCISEARCH
 128 FILE USPATFULL
 4 FILE USPAT2

67 FILES SEARCHED...

13 FILES HAVE ONE OR MORE ANSWERS, 68 FILES SEARCHED IN STNINDEX

L11 QUE L10(L) L2 NOT L3

=> d rank

F1 128 USPATFULL
 F2 35 CAPLUS
 F3 18 SCISEARCH
 F4 6 PASCAL
 F5 4 USPAT2
 F6 3 EMBASE
 F7 3 NTIS
 F8 3 RDISCLOSURE
 F9 2 DISSABS
 F10 1 BIOTECHNO
 F11 1 DRUGU
 F12 1 ESBIODASE
 F13 1 LIFESCI

=> file f2-4 f6-13
COST IN U.S. DOLLARS

SINCE FILE ENTRY	TOTAL SESSION
4.56	29.23

FULL ESTIMATED COST

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)

SINCE FILE ENTRY	TOTAL SESSION
0.00	-1.39

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=> s l11

L12 74 L11

=> dup rem l12

DUPLICATE IS NOT AVAILABLE IN 'RDISCLOSURE'.
ANSWERS FROM THESE FILES WILL BE CONSIDERED UNIQUE
PROCESSING COMPLETED FOR L12

L13 59 DUP REM L12 (15 DUPLICATES REMOVED)
 ANSWERS '1-35' FROM FILE CAPLUS
 ANSWERS '36-49' FROM FILE SCISEARCH
 ANSWERS '50-52' FROM FILE NTIS
 ANSWERS '53-55' FROM FILE RDISCLOSURE
 ANSWERS '56-57' FROM FILE DISSABS
 ANSWER '58' FROM FILE DRUGU

ANSWER '59' FROM FILE LIFESCI

=> d 1-37 59 bib abs

L13 ANSWER 1 OF 59 CAPLUS COPYRIGHT 2004 ACS on STN DUPLICATE 5
 AN 2000:614484 CAPLUS
 DN 133:367154
 TI A thin, composite sodium chloride dosimeter with diffuse reflected light spectrophotometric read out
 AU Zagorski, Z. P.; Rafalski, A.
 CS Department of Radiation Chemistry and Technology, Institute of Nuclear Chemistry and Technology, Warsaw, 03-195, Pol.
 SO Journal of Radioanalytical and Nuclear Chemistry (2000), 245(2), 233-236
 CODEN: JRNCDM; ISSN: 0236-5731
 PB Kluwer Academic Publishers
 DT Journal
 LA English
 AB **Optical** absorption by electrons **trapped** in natural anionic vacancies in NaCl was used for the construction of a dosimeter for radiation processing. To meet the demands of electron beam processing, characterized by congestion of isodoses, the active part of the dosimeter, i.e., the microcrystals of NaCl are embedded in a 0.3 mm thick polyethylene film, in which doses from 10 MeV electrons do not exceed $\pm 2\%$ difference in extreme parts of the dosimeter body. The dosimetric film is opaque and the absorbance at the wavelength $\lambda_{\text{max}} = 465 \text{ nm}$, i.e., the **maximum absorption** of the F band, is measured by diffuse reflected light spectrophotometry (DRS). The measurement is performed against the unirradiated film as reference, thus increasing the accuracy, by self-compensation of signals not belonging to the absorption of F-centers. The spectrum obtained in such a way is identical with that of F-centers in irradiated single NaCl crystals. The calibration curve of the height of the band is almost linear vs. the dose in the range of several tens of kilograys. As ordinary grades of NaCl may be used, the dosimeter developed is cheap and enables to map the irradiation field in objects of complicated geometry.

RE.CNT 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L13 ANSWER 2 OF 59 CAPLUS COPYRIGHT 2004 ACS on STN DUPLICATE 8
 AN 1995:959015 CAPLUS
 DN 124:17812
 TI Instrumental configuration for direct measurement of optical absorption of ion cyclotron resonance mass-selected trapped ions
 AU Huang, Yulin; Jackson, George; Kim, Hyun Sik; Guan, Shenheng; Marshall, Alan G.
 CS Cent. Interdisciplinary Magnetic Resonance, Florida State Univ., Tallahassee, FL, 32306-4005, USA
 SO Physica Scripta, T (1995), T59(Trapped Charged Particles and Related Fundamental Physics), 387-91
 CODEN: PHSTER; ISSN: 0281-1847
 PB Royal Swedish Academy of Sciences
 DT Journal
 LA English
 AB Identification and structural anal. of gas-phase ions is presently based on methods similar to those used in condensed-phase chemical 75 yrs ago: namely, breaking the ion apart and weighing the fragments, and/or using chemical reactions to identify groups or reactive centers. For example, dissociation of mass-selected parent ions by (e.g.) collision-induced dissociation [CID], photodissocn., electron impact dissociation, surface-induced dissociation, etc., yields a product ion mass spectrum from which parent ion structure and bonding are indirectly inferred. Optical spectroscopy, however, can reveal directly the structure of the absorbing species. Directly measured optical absorption spectra of ions have yielded structures of a few

species, such as H₃⁺. Most such expts. were carried out in a discharge tube although a few mass selected ion spectra were obtained in a fast ion beam. Here, the authors propose to conduct **optical** absorption expts. on mass-selected ions in an ICR ion **trap**; such expts. require that both **optical absorption** sensitivity and the **maximum** number of **trapped** ions be improved by an order of magnitude. To increase absorption sensitivity, the authors have chosen a newly developed cavity ring-down method which was previously demonstrated for visible spectra of neutrals. Using quadrupolar excitation and collisional cooling to axialize and mass-select ions in a multi-chamber **trap**, the authors hope to **trap** as many as 10⁹ ions with an effective **optical** path length of 10,000 m, making it possible to detect ions of 10⁻¹⁶ cm² absorption cross-section.

L13 ANSWER 3 OF 59 CAPLUS COPYRIGHT 2004 ACS on STN DUPLICATE 10

AN 1993:581408 CAPLUS

DN 119:181408

TI Effects of substitution of the median thiophene ring on the electrodeposition and structure of poly(terthienyls)

AU Roncali, Jean; Gorgues, Alain; Jubault, Michel

CS Lab. Mater. Mol., CNRS, Thiais, 94320, Fr.

SO Chemistry of Materials (1993), 5(10), 1456-64

CODEN: CMATEX; ISSN: 0897-4756

DT Journal

LA English

AB A series of α -terthienyls substituted at the β -position of the median thiophene ring by Me, octyl, and dioxahexyl groups are prepared and their electrooxidn. and electropolymn. are studied with reference to unsubstituted α -terthienyl. The electrooxidn. process appears strongly dependent on the initial substrate concentration, and the emergence

of a concentration-dependent addnl. oxidation wave between those corresponding to the

formation of the cation radical and dication states suggests the occurrence of an aggregation process. Although substitution does not significantly affect the oxidation potential of the α -terthienyl system, the nature of the attached substituent strongly affects the electropolymn. process and the structure of the resulting material. Anal. of the electrochem. and **optical** properties of the various poly(terthienyls) by cyclic voltammetry and UV-visible absorption spectroscopy shows that the electropolymn. of all α -terthienyls is accompanied by the **trapping** of significant amts. of starting material in the film. Although α -terthienyl leads to a poorly conjugated polymer, the presence of long alkyl or oxyalkyl chains on the α -terthienyl system produces a several hundred millivolt decrease of the oxidation potential of the polymer and a 70-80-nm bathochromic shift of its **absorption maximum**, changes that are indicative of a considerable extension of conjugation. These results are discussed with regard to the specific reactivity of the α -terthienyl system and to the effects of substitution on the solubility of the electrooxidn. products.

L13 ANSWER 4 OF 59 CAPLUS COPYRIGHT 2004 ACS on STN DUPLICATE 11

AN 1992:243934 CAPLUS

DN 116:243934

TI A coupled molecular dynamics and SCF-X α -SW technique of calculations of optical absorption spectra of localized electron in molten mixtures of alkali halides

AU Wojcik, Mariusz; Bartczak, Witold M.; Kroh, Jerzy

CS Inst. Appl. Radiat. Chem., Tech. Univ., Lodz, 93-590, Pol.

SO Bulletin of the Polish Academy of Sciences, Chemistry (1991), 39(2), 181-90

CODEN: BPACEQ; ISSN: 0239-7285

DT Journal

LA English

AB Coupled mol. dynamics and quantum-chemical SCF-X α -SW techniques are

applied to calculate the optical absorption of solvated electron in molten alkali halides and their mixts. First step of the calcns. consists in the computer simulation of the system of alkali and halide ions plus a model anion which represents the solvated electron. The local ionic configurations around the model anion which are obtained by the simulation are then used as an input for the SCF-X α -SW quantum-chemical program and the electron transition energies for these configurations are calculated. The most probable trapping sites for an excess electron in molten KBr/LiBr systems are formed by the configurations of 3 cations. The calcns. of the ensemble-averaged energy of the **optical** transitions of the **trapped** electrons in the KBr/LiBr systems correctly reproduce the exptl. dependence of the **maximum** of **optical** **absorption** on the KBr/LiBr composition

L13 ANSWER 5 OF 59 CAPLUS COPYRIGHT 2004 ACS on STN DUPLICATE 12

AN 1991:72146 CAPLUS

DN 114:72146

TI Pulse radiolysis of ethylene glycol and 1,3-propanediol glasses - I. Absorption spectra of trapped electrons

AU Bedekar, A. G.; Czerwik, Z.; Kroh, J.

CS Inst. Appl. Radiat. Chem., Tech. Univ., Lodz, 93-590, Pol.

SO Radiation Physics and Chemistry (1990), 36(6), 735-7

CODEN: RPCHDM; ISSN: 0146-5724

DT Journal

LA English

AB **Optical** absorption spectra of **trapped** electrons produced by pulse radiolysis in a glass matrixes of ethylene glycol (EG) and 1,3-propanediol (PD) were examined at 6, 90 and 150 K in the visible region. The end-of-pulse values of λ_{max} for EG are 600, 550 and 530 nm at 6, 90 and 150 K resp., whereas for PD, the corresponding maximum are found at 620, 580 and 550 nm. Initial absorbance at maximum does not change with temperature in EG and PD except at 150 K while it increases in PD. The **maximum** of **absorption** for both diols shifts towards blue with increasing temperature and time. This is more evident in PD than in EG. The observed behavior can be due to the mol. structures of the 2 matrixes.

L13 ANSWER 6 OF 59 CAPLUS COPYRIGHT 2004 ACS on STN

AN 2002:530397 CAPLUS

DN 137:223463

TI Maximal atomic coherence via selective trapping of dressed states

AU Hu, Xiang-ming; Zhang, Jie-Peng; Xu, Zhi-zhan

CS Department of Physics, Huazhong Normal University, Wuhan, 430079, Peop. Rep. China

SO Physical Review A: Atomic, Molecular, and Optical Physics (2002), 65(6), 063812/1-063812/6

CODEN: PLRAAN; ISSN: 1050-2947

PB American Physical Society

DT Journal

LA English

AB Strong-field index enhancement was considered in 3-level systems in which there is a strong spontaneous decay from an auxiliary level into either of 2 states that the probe field couples. A control field is detuned resonant with the transition between the auxiliary level and 1 of the dressed states produced by the strong probe field. It is possible to achieve maximal atomic coherence, which characterizes an ultralarge index of refraction and vanishing absorption. This scheme is based on selective dressed population trapping, which is established by relying on the control field and the strong decay to transfer population from 1 dressed state to another through the auxiliary level. An advantage of the present scheme is that the conditions for its realization are accessible exptl.

RE.CNT 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L13 ANSWER 7 OF 59 CAPLUS COPYRIGHT 2004 ACS on STN

AN 1992:622856 CAPLUS
DN 117:222856
TI Does the parent positive ion intervene in the fate of the incompletely relaxed trapped electron in irradiated polar liquids?
AU Jay-Gerin, J. P.; Ferradini, C.
CS Fac. Med., Univ. Sherbrooke, Sherbrooke, QC, J1H 5N4, Can.
SO Canadian Journal of Chemistry (1992), 70(6), 1869-71
CODEN: CJCHAG; ISSN: 0008-4042
DT Journal
LA French
AB A model is proposed concerning the influence of the parent pos. ion on the fate of the incompletely relaxed trapped electron (eir-) in irradiated polar liqs. This model is based on the release, by a tunneling and (or) a trap-hopping mechanism in the Coulomb field of the cation, of the electrons captured in preexisting shallow localized states below the bottom of the conduction band of the solvent. The released electrons would either recombine with the parent pos. ion or get retrapped. The net effect would be an accumulation of electrons in deeper traps. The removal of weakly **trapped** electrons would contribute to the decrease of the IR part of the **optical** absorption spectrum during the very early time dynamics of electron solvation. Such a process would imply, as a consequence, the existence of a **maximum** of the eir-**absorption** spectrum.

L13 ANSWER 8 OF 59 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1989:124098 CAPLUS
DN 110:124098
TI Molecular dynamics simulation of the optical absorption spectrum of the hydrated electron
AU Romero, C.; Jonah, C. D.
CS Chem. Div., Argonne Natl. Lab., Argonne, IL, 60439, USA
SO Journal of Chemical Physics (1989), 90(3), 1877-87
CODEN: JCPSA6; ISSN: 0021-9606
DT Journal
LA English
AB The optical absorption spectrum of the hydrated electron was computed at 300 K using the Feynman path integral formulation of quantum statistical mechanics in conjunction with mol. dynamics simulations. In addition, the potential energy of the hydrated electron was studied at 700 K as a function of the liquid d. between 0.02 and 1.0 g/cm and correlated with the **maximum** of the **absorption** spectrum. The procedure to calculate the **optical** spectrum makes use of the solution of the Schroedinger equation fro an ensemble of model potentials which span the region allowed by the fluctuations of the potential well which **traps** the electron in thermodyn. equilibrium. The results indicate that the absorption band is due to a strongly allowed 1s → 2p transition and the breadth of the spectrum is a consequence of the fluctuations in the trap dimensions. Moreover, these calcns. imply that the long tail of the absorption spectrum in the UV arises from electrons which are in deep traps. Such traps occur with low but finite probability in the ensemble of solvent configurations which are accessible to the system in thermal equilibrium. Calcns. of the average potential energy of the electron as a function of the d. reproduced well the measured shift in the absorption spectrum of the excess electron in water.

L13 ANSWER 9 OF 59 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1988:66751 CAPLUS
DN 108:66751
TI Oxygen-trapped holes in acceptor doped potassium niobate
AU Possenriede, E.; Hellermann, B.; Schirmer, O. F.
CS Fachbereich Phys., Univ. Osnabruck, Osnabruck, D-4500, Fed. Rep. Ger.
SO Solid State Communications (1988), 65(1), 31-3
CODEN: SSCOA4; ISSN: 0038-1098
DT Journal

LA English
AB Under illumination with visible and near-UV light, Ti-doped KNbO₃ shows ESR of O-trapped holes as well as a corresponding **optical absorption** band with **maximum** at .apprx. eV. In the most likely model, the hole wavefunction extends over 2 neighboring O ions next to Ti⁴⁺ substituting for Nb⁵⁺.

L13 ANSWER 10 OF 59 CAPLUS COPYRIGHT 2004 ACS on STN

AN 1987:224224 CAPLUS

DN 106:224224

TI ESR and electronic spectra of alkane radical cations formed in γ -irradiated 3-methylpentane and 3-methylhexane glasses containing alkane solutes

AU Ichikawa, Takahisa; Ota, Nobuaki

CS Dep. Appl. Phys. Chem., Hiroshima Univ., Higashi-Hiroshima, 724, Japan

SO Journal of Physical Chemistry (1987), 91(12), 3244-8

CODEN: JPCHAX; ISSN: 0022-3654

DT Journal

LA English

AB ESR and **optical** difference spectra on photobleaching are measured, and the radical cations from some higher alkanes (C₉-C₁₁) and some methyl-branched butanes are found to be **trapped** in 3-methylpentane or 3-methylhexane matrixes at 77 K. The ESR spectra show close agreement with those of radical cations produced in CCl₂FCClF₂ matrixes. The cations of methyl-branched butanes give the **absorption** bands with λ_{max} ranging from 300 to 260 nm; the bands are attributed to σ -localized cations, while the higher alkane cation bands appearing in the near-IR region are ascribed to σ -delocalized cations. The cations of higher alkanes were mobilized by light with $\lambda > 900$ nm to recombine with the neg. ions formed by electron scavenging.

L13 ANSWER 11 OF 59 CAPLUS COPYRIGHT 2004 ACS on STN

AN 1987:129064 CAPLUS

DN 106:129064

TI Electron-transfer reactions on cadmium selenide colloids as studied by pulse radiolysis

AU Dimitrijevic, Nada M.

CS Radiat. Lab., Univ. Notre Dame, Notre Dame, IN, 46556, USA

SO Journal of the Chemical Society, Faraday Transactions 1: Physical Chemistry in Condensed Phases (1987), 83(4), 1193-201

CODEN: JCFTAR; ISSN: 0300-9599

DT Journal

LA English

AB Optical effects due to size quantization were observed for CdSe colloids with particle diams. < 50 Å. Electron-transfer reactions from different electron donors such as (CH₃)₂ovrhdot.CO₂H and .ovrhdot.CO₂- radicals to CdSe colloidal particles were studied by pulse radiolysis. The **optical** properties of excess electrons show an **absorption maximum** at 300 nm which corresponds to **trapped** electrons and formation of Cd⁺ sites in the bulk and at the surface of semiconductor particles. Cd⁺ sites are not long-lived: they undergo further reduction to Cd⁰. The equilibrium of electron transfer between nitrobenzene anion radicals and CdSe colloidal particles in acetonitrile solution was also studied with pulse radiolysis. The equilibrium concentration of nitrobenzene anion radicals in the presence of CdSe colloids can be exploited to derive the redox potential of semiconductor colloids; a value of -1.20 .10.05V vs. SCE was determined

L13 ANSWER 12 OF 59 CAPLUS COPYRIGHT 2004 ACS on STN

AN 1987:439048 CAPLUS

DN 107:39048

TI Fast kinetics of the reactions of hydroxyl radicals with nitron spin traps

AU Sridhar, R.; Beaumont, P. C.; Powers, E. L.

CS Biomembrane Res. Lab., Oklahoma Med. Res. Found., Oklahoma City, OK,
73104, USA
SO Journal of Radioanalytical and Nuclear Chemistry (1986), 101(2), 227-37
CODEN: JRNCMD; ISSN: 0236-5731
DT Journal
LA English
AB The technique of spin trapping with nitron spin traps has gained wide
acceptance as a method for estimating OH yields in ESR studies. Fast
optical kinetic techniques applied to a series of these
traps reveal relaxation spectra that indicate 2 **absorption**
maximum with different time consts., with all except
 α -4-pyridyl-1-oxide-N-tert-Bu nitron showing 2nd order behavior.
These 2 spectral regions show different kinetics. Two reaction sites are
indicated, only one of which is necessarily a mixture of initial OH when ESR
methods are used. One other trap after OH reaction decays in one mode
suggesting that its final product might be useful as a measure of initial
OH. OH detection can be improved significantly by spin trapping
 α -hydroxyalkyl radicals formed by OH attack on alcs.

L13 ANSWER 13 OF 59 CAPLUS COPYRIGHT 2004 ACS on STN

AN 1987:564215 CAPLUS

DN 107:164215

TI Correlation of Fe⁴⁺ optical anisotropy, Brazil twinning and channels in
the basal plane of amethyst quartz

AU Adekeye, Jacob I. D.; Cohen, Alvin J.

CS Dep. Geol. Planet. Sci., Univ. Pittsburgh, Pittsburgh, PA, 15260, USA

SO Applied Geochemistry (1986), 1(1), 153-60

CODEN: APPGEY; ISSN: 0883-2927

DT Journal

LA English

AB The biaxial absorption bands in amethyst quartz, with peaks at 2.28 eV and
3.54 eV related to Fe⁴⁺ and a peak at 3.02 eV-which is the A3 band related
to the [AlO₄]^o **trapped** hole center, have orientations of
maximum light **absorption** in the basal plane of
Brazil-twinning r-growth sectors paralleling the planes of Brazil
optical twinning. Absorption min. are at 90° to the maximum
in all cases. The Brazil twinning planes always parallel the a-axes
(1.hivin.210, etc.) of quartz and in many cases also parallel planes
perpendicular to the r-faces (10.hivin.11, etc.). These are directions of
channels in the quartz structure. The anisotropy ratio,
 $\sigma_{\max}/\sigma_{\min}$, of the Fe⁴⁺ band is that of the A2 absorption band
in smoky quartz as would be expected if Fe³⁺ furnishes electrons to quench
the trapped holes causing this absorption band. In the absence of the A1
and A2 absorption bands, the A3 absorption band width at half-maximum
decreases from 1.43 to 0.36 eV indicating decreased charge-transfer
character of the [AlO₄]^o center in the absence of the other types
of Al trapped-hole centers in quartz. The key to the Brazil twinning in
 α -quartz are the channels which fill with large Fe³⁺ ions that force
twinning to relieve strain in the structure. Amethyst color results only
if Al is present substitutionally in the quartz as well as the
interstitial Fe plus ionizing radiation.

L13 ANSWER 14 OF 59 CAPLUS COPYRIGHT 2004 ACS on STN

AN 1985:194325 CAPLUS

DN 102:194325

TI Effect of solution microstructure on the hydrated electron absorption
spectrum

AU Kreitus, I. V.

CS Dep. Chem., Latvian State Univ., Riga, 226098, USSR

SO Journal of Physical Chemistry (1985), 89(10), 1987-90

CODEN: JPCHAX; ISSN: 0022-3654

DT Journal

LA English

AB The changes in the optical characteristics of pulse radiolytically
generated electrons were measured in LiCl solns. in H₂O and D₂O at

21° over the range 0-15 M. Increasing the LiCl concentration causes a nonuniform increase of the energy of the eaq- **absorption** spectrum **maximum** and the half-width of the absorption band. More rapid changes in concentration regions corresponding to LiCl.6H₂O and LiCl.4H₂O are related to solution microstructure. The shift of the eaq- absorption spectrum is compared with the exptl. measured displacement of the eaq- conduction band. The latter, as well as changes of the electron hydration energy, is responsible for the observed differences in the eaq- absorption band with increasing LiCl concentration. Spectral characteristics are analyzed from the positions of "**trap-trap**" and continuum concepts of **optical** excitation and from "cavity" and hydrated H₂O- electron models.

L13 ANSWER 15 OF 59 CAPLUS COPYRIGHT 2004 ACS on STN

AN 1984:454340 CAPLUS

DN 101:54340

TI Radical pairs and trapped electrons in single crystals of pentaerythritol. An electron spin resonance and pulse radiolysis kinetic study

AU Nilsson, Goesta; Lund, Anders

CS Studsvik Sci. Res. Lab., Nykoeping, S-611 82, Swed.

SO Journal of Physical Chemistry (1984), 88(15), 3292-5
CODEN: JPCHAX; ISSN: 0022-3654

DT Journal

LA English

AB The rate of transformation of radical pairs to monoradicals in γ -irradiated single crystals of pentaerythritol, protonated or deuterated in the hydroxyl groups, was obtained by measuring the decay rate of the ESR signal of the radical pairs from 106 to 129 K. An isotope effect in the transformation rate was found and atom tunneling seems to be involved. A mechanism is proposed. Pulse radiolysis data have shown that there is an isotope effect also in the decay rate of the **optical** absorption of electrons **trapped** in the crystal. The activation energies are 6.7 and 9.0 kcal/mol and the **absorption max** are at 430 and 510 nm for C(CH₂OH)₄ and C(CH₂OD)₄, resp. A second moment anal. of the ESR line of the electrons shows that they are most likely trapped in interstitial positions.

L13 ANSWER 16 OF 59 CAPLUS COPYRIGHT 2004 ACS on STN

AN 1985:53785 CAPLUS

DN 102:53785

TI Optical signs of the heterogeneity of the energy distribution of equilibrium solvated electrons in liquid and glassy ammonia-methanol mixtures

AU Zhigunov, V. A.; Khaikin, G. I.; Shornikov, V. V.

CS Inst. Elektrokhim., Moscow, USSR

SO Khimiya Vysokikh Energii (1984), 18(6), 514-19
CODEN: KHVKA0; ISSN: 0023-1193

DT Journal

LA Russian

AB The absorption spectra of solvated electrons (es) in MeOH solns. containing 0.12 and 0.16 mol fractions of NH₃ were studied by using μ s pulse radiolysis. The temperature dependence (120-314 K) of energy corresponding to the **absorption maximum** (E_m) displayed a drop of .apprx.0.7 eV, and spectra in the vicinity of the drop were structured. The region of the drop shifted to a higher temperature with a decrease of NH₃ concentration in the solution. Increased photosensitivity of the shape and location of the **optical** spectrum of the electrons **trapped** (e+) in these matrices was also observed

L13 ANSWER 17 OF 59 CAPLUS COPYRIGHT 2004 ACS on STN

AN 1983:188944 CAPLUS

DN 98:188944

TI Electron trapping in alcohol clusters in γ -irradiated alcohol-2,2,4-trimethylpentane-2,2-dimethylbutane glasses at 77 K

AU Kimura, Toyooki; Yasuda, Kazuhiro; Fukuda, Shigeki; Fueki, Kenji
 CS Fac. Eng., Nagoya Univ., Nagoya, 464, Japan
 SO Canadian Journal of Chemistry (1983), 61(3), 553-7
 CODEN: CJCHAG; ISSN: 0008-4042
 DT Journal
 LA English
 AB An **optical** absorption study was made on electrons (ealc-) **trapped** in alc. clusters in γ -irradiated PrOH-2,2,4-trimethylpentane (TMP)-2,2-dimethylbutane (DMB), BuOH-TMP-DMB, and 1-pentanol-TMP-DMB mixture glasses at 77 K. Hitherto electron transfer from the hydrocarbon region into alc. clusters was known to be a major process for ealc- formation in γ -irradiated alc.-hydrocarbon glasses. In the present systems, this type of electron transfer was not observed and the ealc- formation resulted only from the direct radiolysis of alcs. In the alc. concentration range <0.2 electron fraction the yields of ealc- were lower than those expected from the direct radiolysis of alcs. The average number of alc. mols. in a cluster in these systems was estimated to be 4 in the lower alc. concentration range studied. The position of the **absorption maximum** for ealc- in these systems was constant within exptl. uncertainties independent of alc. concentration, which was consistent with the results of a semicontinuum model calcn.

L13 ANSWER 18 OF 59 CAPLUS COPYRIGHT 2004 ACS on STN
 AN 1982:76773 CAPLUS
 DN 96:76773
 TI An optical absorption study of trapped electrons in γ -irradiated 3-methylhexane-2,2,4-trimethylpentane-2,2-dimethylbutane mixture glasses at 77 K
 AU Kimura, Toyooki; Ogawa, Naoyuki; Fueki, Kenji
 CS Fac. Eng., Nagoya Univ., Nagoya, 464, Japan
 SO Bulletin of the Chemical Society of Japan (1981), 54(12), 3854-6
 CODEN: BCSJA8; ISSN: 0009-2673
 DT Journal
 LA English
 AB An **optical** absorption study was made on **trapped** electrons in γ -irradiated 3-methylhexane-2,2,4-trimethylpentane-2,2-dimethylbutane glasses at 77 K. The **absorption maximum** of trapped electron spectra shifts to longer wavelengths and the trapped electron yield decreases with decreasing 3-methylhexane concentration. The observed spectral shifts were interpreted through a semicontinuum model calcn.

L13 ANSWER 19 OF 59 CAPLUS COPYRIGHT 2004 ACS on STN
 AN 1979:112651 CAPLUS
 DN 90:112651
 TI ESR and optical absorption spectra of electrons trapped at 77 K in 6-20 M alkaline ice
 AU Polevoi, P.; Plonka, A.
 CS Inst. Appl. Radiat. Chem., Tech. Univ. Lodz, Lodz, Pol.
 SO Radiochemical and Radioanalytical Letters (1978), 36(4-5), 235-43
 CODEN: RRALAZ; ISSN: 0079-9483
 DT Journal
 LA English
 AB For electrons **trapped** in alkaline ices, the changes in ESR spectra (decrease of g value, increase of half-width, and departure from the Gaussian form) and the changes in **optical** absorption spectra (red shift; of **maximum absorption**, increase of half-width) with increasing NaOH concentration indicate the increasing contribution of solvent-shared ion pairs. These ion pairs are less stable than electrons at 77 K one observes, beside slow decay, the reverse changes in the ESR and optical absorption spectra.

L13 ANSWER 20 OF 59 CAPLUS COPYRIGHT 2004 ACS on STN

AN 1978:180164 CAPLUS
 DN 88:180164
 TI The electron transfer processes in x-irradiated alkaline ice at 77 K
 AU Kroh, J.; Mayer, J.; Polevoi, P.
 CS Inst. Appl. Radiat. Chem., Lodz, Pol.
 SO Proceedings of the Tihany Symposium on Radiation Chemistry (1977), Volume
 Date 1976, 4, 679-4
 CODEN: PTSCDP; ISSN: 0134-126X
 DT Journal
 LA English
 AB The effect of matrix composition on the yield of the **trapped**
 electrons and on the position of wavelength maximum (λ **max**)
 of their **optical absorption** spectra was studied in
 x-irradiated frozen aqueous NaOH solns. at 77 K. Some results concerning the
 trapped electron decay in the alkaline ice matrix with varying NaOH
 concentration in
 the presence of a scavenger are presented. The observed red shift of
 λ max for concentrated NaOH frozen solns. is explained by assuming the
 formation of new kind of traps probably involving NaOH mols. via hydrated
 pairs.

L13 ANSWER 21 OF 59 CAPLUS COPYRIGHT 2004 ACS on STN

AN 1975:610932 CAPLUS

DN 83:210932

TI Electronic spectra of trapping electrons in γ -irradiated
 organic-mixture glasses at 77.deg.K

AU Ito, T.; Ujikawa, N.; Fueki, K.

CS Fac. Eng., Nagoya Univ., Nagoya, Japan

SO Journal of Physical Chemistry (1975), 79(23), 2479-84

CODEN: JPCHAX; ISSN: 0022-3654

DT Journal

LA English

AB An **optical** absorption study was made of **trapped**
 electrons produced in γ -irradiated organic-mixture glasses at
 77°K. Electronic spectra were observed for trapped electrons in a
 variety of binary-mixture glasses which consist of solvents with various
 polarity. Optical parameters obtained from the observed spectra are
 reported. The spectra of trapped electrons have the only one
absorption maximum in all of the mixture glasses studied
 except for 2-propanol-3-methylpentane glass. The **absorption**
maximum in the spectrum of trapped electrons in a mixed solvent is
 located at a wavelength between those in pure component solvents, the
 wavelength depending on the mixture composition. There are 2 **absorption**
maxima in the spectrum of trapped electrons in
 2-propanol-3-methylpentane glass, each maximum corresponding to that in its
 component spectrum. Changes in the trapped-electron spectra with composition
 of the mixts. are interpreted in terms of the polarity and structure
 effects.

L13 ANSWER 22 OF 59 CAPLUS COPYRIGHT 2004 ACS on STN

AN 1974:579454 CAPLUS

DN 81:179454

TI Wavelength selective bleaching (burning holes) in the optical spectra of
 trapped electrons in organic glasses

AU Hager, S. L.; Willard, J. E.

CS Dep. Chem., Univ. Wisconsin, Madison, WI, USA

SO Journal of Chemical Physics (1974), 61(8), 3244-6

CODEN: JCPSA6; ISSN: 0021-9606

DT Journal

LA English

AB Exptl. evidence is given confirming that the broad **optical**
 absorption spectra of **trapped** electrons in glassy
 3-methylpentane and methyltetrahydrofuran (MTHF) are convolutions of
 spectra of electrons **trapped** with different energies. Laser
 light of wavelengths near or to the red of the et - optical

absorption maximum selectively depopulates electrons which absorb at the bleaching wavelength, thus creating a hole in the et-spectrum. Some addnl. indications as to the spectral properties of the individual electrons are given by the observations that (1) illumination of et- produced in MTHF at 25°K with laser light to the blue of the **absorption maximum** results in nearly uniform bleaching throughout the spectrum; (2) et-produced in MTHF at 67°K and illuminated at 25°K with 1064 nm are bleached less efficiently than et-produced at 25°K and have a low probability of being shifted to traps typical of mobile electron trapping at 25°K; (3) the spectra of et- in MTHF are progressively red-shifted as the temperature at which they are produced is lowered from 97 to 10°K, and the resolution of the peaks observable in the spectrum produced at 72°K is lower for spectra of et-produced at higher (97°K) or lower (25 and 10°K) temps. Some implications of these observations are discussed.

- L13 ANSWER 23 OF 59 CAPLUS COPYRIGHT 2004 ACS on STN
 AN 1973:471761 CAPLUS
 DN 79:71761
 TI Electronic spectra of trapped electrons in organic glasses at 4.deg.K. V. Aliphatic amines
 AU Ito, Toshiyasu; Fueki, Kenji; Namiki, Akira; Hase, Hiroto
 CS Fac. Eng., Nagoya Univ., Nagoya, Japan
 SO Journal of Physical Chemistry (1973), 77(14), 1803-5
 CODEN: JPCHAX; ISSN: 0022-3654
 DT Journal
 LA English
 AB **Optical absorption** measurements were carried out on **trapped** electrons in aliphatic amine glasses at 4 and 77°K. A slight red shift or no shift of the absorption spectrum at 4°K relative to that at 77°K was observed for trapped electrons in several amines. The wavelength at the **absorption maximum** in the optical spectra at 77°K is generally correlated to matrix polarity. A comparison is also made between the efficiency of electron trapping at 4° and that at 77°K for some of the amines.
- L13 ANSWER 24 OF 59 CAPLUS COPYRIGHT 2004 ACS on STN
 AN 1973:22460 CAPLUS
 DN 78:22460
 TI Dissociative electron attachment to dimethyl ether in irradiated 3-methylpentane glass
 AU Yoshida, Hiroshi; Irie, Masahiro; Shimada, Osamu; Hayashi, Koichiro
 CS Fac. Eng., Hokkaido Univ., Sapporo, Japan
 SO Journal of Physical Chemistry (1972), 76(25), 3747-50
 CODEN: JPCHAX; ISSN: 0022-3654
 DT Journal
 LA English
 AB The **trapped** electron in γ -irradiated 3-methylpentane glass containing Me₂O shows an ESR spectrum of 3.7 G width and an **optical absorption** band with a **maximum** at 1250 nm. It is bleached with light of a wavelength <1170 nm. The photobleaching is followed by the formation of a Me radical. The conversion efficiency from a trapped electron to a Me radical is independent of the wavelength in the range examined (1170-600 nm). All exptl. results indicate that the Me radical is formed by dissociative electron attachment to Me₂O which occurs only when the trapped electron is photobleached but does not occur during γ -irradiation. According to gas-phase data, the reaction is expected to be endothermic by .apprx.0.7 eV, although this value may be decreased somewhat in the glassy matrix. Therefore, the results seem to lead to the amazing conclusion that all electrons detrapped by light have an appreciable amount of kinetic energy independent of the photon energy of the light.

AN 1971:428075 CAPLUS
 DN 75:28075
 TI Trapped electrons in alkylamine glasses at 77.deg.K
 AU Noda, Shoji; Fueki, Kenji; Kuri, Zenichiro
 CS Fac. Eng., Nagoya Univ., Nagoya, Japan
 SO Chemical Physics Letters (1971), 8(5), 407-8
 CODEN: CHPLBC; ISSN: 0009-2614
 DT Journal
 LA English
 AB The ESR linewidths (in G) between derivative maximum and the wavelengths (in nm) of the **optical absorption maximum**, resp., of **trapped** electrons in γ -irradiated alkylamine glasses were: for primary amines (e.g., 2-methyl-n-amylamine), 24-25, 1100-1200; for secondary amines (e.g., 3-methylpiperidine), 6-14, 1300-1400; for tertiary amines (e.g., Et₃N), 3-4, 1650. The g values for the trapped electrons were ≈ 2.001 . The radiochem. yields of the trapped electrons were ≈ 2 , ≈ 0.9 , and ≈ 0.4 , resp., for the primary, secondary, and tertiary amines. The depths of the electron traps in the amines were in the order: primary > secondary > tertiary.

L13 ANSWER 26 OF 59 CAPLUS COPYRIGHT 2004 ACS on STN
 AN 1972:52901 CAPLUS
 DN 76:52901
 TI Laser bleaching of trapped electron optical bands in γ -irradiated alkaline ice
 AU Ho, Ken K.; Kevan, Larry
 CS Dep. Chem., Wayne State Univ., Detroit, MI, USA
 SO International Journal for Radiation Physics and Chemistry (1971), 3(3), 193-9
 CODEN: IJRCA6; ISSN: 0020-7055
 DT Journal
 LA English
 AB The **maximum** of the **optical absorption** band of **trapped** electrons in glassy alkaline ice at 77°K shifts to higher energy when the low-energy side of the band is optically bleached. This suggests that there is a distribution of ground-state energies for the trapped electrons and, consequently, a distribution of vacancy sizes in which the electrons are trapped. The fine structure of the broad absorption band has been probed by comparing laser bleaching at 633 nm with broadband monochromator bleaching at 633 nm. Although the laser linewidth is 750 times smaller than that of the monochromator light, the trapped-electron band shifts were equivalent, and it was not possible to bleach a narrow portion out of the broad band corresponding to a single narrow component or resolved single-energy trap depth. The width of the component optical band corresponding to a particular ground-state energy is broad rather than narrow. Laser bleaching in the low-energy tail of trapped electrons in KCl crystals caused uniform and symmetric bleaching consistent with a single trap depth.

L13 ANSWER 27 OF 59 CAPLUS COPYRIGHT 2004 ACS on STN
 AN 1970:450579 CAPLUS
 DN 73:50579
 TI Correlation of ESR and optical spectra from five x-irradiated amino acids
 AU Shields, Howard W.; Marsh, William; Hamrick, Phillip J., Jr.
 CS Dep. of Phys., Wake Forest Univ., Winston-Salem, NC, USA
 SO Journal of Chemical Physics (1970), 52(12), 6437-8
 CODEN: JCPSA6; ISSN: 0021-9606
 DT Journal
 LA English
 AB **Optical** absorptions near 250 (π - π^*) and 350 (n- π^*) nm can be used to characterize **trapped** radicals of the form RR'CCOOH in nonconjugated organic solids. Optical and ESR spectra were taken as functions of irradiation dose in 5 x-irradiated amino acid single crystals. **Absorption maximum** at 345 and 235 nm and ESR peaks in the spectra of alanine increased at the same rate. The **trapped**

radical MeCHCOOH gave rise to the **optical** absorptions. Similar results were obtained for malonic acid and succinic acid. These optical absorptions were absent in spectra of x-irradiated valine and leucine (in which the π system does not exist).

- L13 ANSWER 28 OF 59 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1971:26615 CAPLUS
DN 74:26615
TI Reactions of electrons and free radicals in glassy ethanol
AU Fujii, Susumu; Willard, John E.
CS Dep. Chem., Univ. Wisconsin, Madison, WI, USA
SO Journal of Physical Chemistry (1970), 74(25), 4313-19
CODEN: JPCHAX; ISSN: 0022-3654
DT Journal
LA English
AB Expts. designed to increase understanding of the mechanisms of trapping and reaction of electrons and free radicals in γ -irradiated glassy EtOH at 77°K are reported. The concentration of electrons grows with increasing γ dose to a maximum at $6 + 1020$ eV/g and then decreases, accompanied by a decrease in G (free radicals). Free radicals are produced during thermal decay of trapped electrons, as well as by photobleaching. There is a blue shift in the **optical absorption** spectrum (λ_{maximum} 535 nm) of **trapped** electrons during thermal decay, and also during photobleaching with 650-nm radiation, but not with 540 nm. Prolonged annealing of EtOH glass at 90°K prior to γ -irradiation alters the available trapping sites in such a manner that the trapped electron spectrum is shifted to the red, the yield is reduced, and the decay rate is increased. MeCHOH radicals produced in the radiolysis decay by 2nd-order kinetics. Parallel growth and decay of the ESR free-radical signal and absorption at 200 nm are consistent with the conclusion that the latter is in part attributable to free radicals.
- L13 ANSWER 29 OF 59 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1970:16614 CAPLUS
DN 72:16614
TI Temperature dependence of photocurrent in γ -irradiated alkaline ice. Location of energy levels of trapped electrons
AU Eisele, I.; Lapple, R.; Kevan, L.
CS Univ. of Kansas, Lawrence, KS, USA
SO Journal of the American Chemical Society (1969), 91(23), 6504-5
CODEN: JACSAT; ISSN: 0002-7863
DT Journal
LA English
AB Alkaline ice (10M NaOH), produced by rapid freezing to 77°K to form a transparent glass, was irradiated with 60Co γ -rays to a dose of 0.03 megarad to produce trapped electrons. This ice is characterized by an EPR singlet and an optical **absorption maximum** at 580 nm. The photocurrent shows that the trapped electrons can be optically excited to a mobile state. The temperature dependence at 4-77°K shows that the **optical** transition is from a bound ground state directly to the conduction band, and the temperature dependence at >77°K shows the presence of shallow **traps** near the conduction band.
- L13 ANSWER 30 OF 59 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1969:42738 CAPLUS
DN 70:42738
TI Effects of matrix polarity on the optical and electron spin resonance spectra of trapped electrons in organic glasses
AU Ekstrom, Alfred; Willard, John E.
CS Univ. of Wisconsin, Madison, WI, USA
SO Journal of Physical Chemistry (1968), 72(13), 4599-603
CODEN: JPCHAX; ISSN: 0022-3654
DT Journal
LA English

AB Trapped electrons produced by γ -irradiation of 13 organic glasses at 77°K. have **optical absorption maximum** (ev.) and E.S.R. line widths which increase smoothly with increasing polarity of the matrix mols., from 3-methylpentane (3MP) to glycerol, consistent with a model in which the electrons are **trapped** in preexisting cavities in the matrix, the size of cavities which stabilize the electrons decreasing with increasing polarity. **Trapped** electrons in mixts. of alcs. in the glassy state show only one **optical absorption maximum**. This shifts from the energy characteristic of the 1st alc. to that of the 2nd as the mole fraction of the 2nd is increased, indicating that the alc. mols. are homogeneously mixed, and that each trapping site is composed of several mols. Trapped electrons in mixts. of normal propanol and 3MP in the glassy state show two electron absorption peaks, one characteristic of each pure species, with preference for trapping in the alc. phase; indicating aggregation of like mols.

L13 ANSWER 31 OF 59 CAPLUS COPYRIGHT 2004 ACS on STN

AN 1969:33160 CAPLUS

DN 70:33160

TI Electron spin resonance spectrum of the O-2 radical ion trapped in nonionic matrices at 77.deg.K

AU Bennett, John Edward; Mile, Brynmor; Thomas, Alun

CS Thornton Res. Center, Shell Res., Ltd., Chester, UK

SO Transactions of the Faraday Society (1968), 64(12), 3200-9

CODEN: TFSOA4; ISSN: 0014-7672

DT Journal

LA English

AB Trapped electrons are formed when alkali metal atoms are deposited on water or alcs. at 77°K. in the rotating cryostat. However, when trace amts. of O are also admitted during deposition, the deep color and characteristic E.S.R. spectrum of the trapped electrons are absent. Instead, the deposit is white and gives a highly asym. E.S.R. spectrum which has basically the same form in all of the solvents. However, the principal value g.dblvert. of the g factor varies slightly, but significantly, with the solvent in which the radical ion is trapped. Identical spectra in the corresponding solvents are observed from (a) frozen samples of water or alcs. which have been saturated with O and then irradiated at 77°K. with 60Co γ -rays; and also from (b) samples which have been prepared by rapidly stirring NaO₂ into the solvent at room temperature and then immediately freezing the resultant slurry in liquid N.

(77°K). All of the E.S.R. spectra observed in these three groups of expts. arise from the O₂- radical ion which is trapped by an assembly of solvent mols. similar to that postulated for electrons trapped in the same solvents. The variation of g.dblvert. with the solvent in which the radical ion is **trapped** is similar to that found for the energy of the **maximum absorption** in the **optical** spectra of electrons **trapped** in these solvents and reflects the degree of interaction between the ion and the solvent.

L13 ANSWER 32 OF 59 CAPLUS COPYRIGHT 2004 ACS on STN

AN 1968:501720 CAPLUS

DN 69:101720

TI Distinguishable electron traps in γ -irradiated n-propanol glass

AU Dainton, Frederick S.; Salmon, G. Arthur; Zucker, U. F.

CS Univ. Leeds, Leeds, UK

SO Chemical Communications (London) (1968), 19, 1172-4

CODEN: CCOMA8; ISSN: 0009-241X

DT Journal

LA English

AB Glassy PROH samples (containing 2 volume % water) are γ -irradiated and an intense optical absorption is observed at 555 m μ . The absorption is assigned to et-. Changes in absorption at <104°K. are studied. The presence of **trapped** electrons which have a different

optical absorption maximum is shown by selective photobleaching.

- L13 ANSWER 33 OF 59 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1968:91805 CAPLUS
DN 68:91805
TI Nature of electron trapping in radiolysis of polar systems
AU Ershov, B. G.; Makarov, I. E.; Pikaev, A. K.
CS Inst. Fiz. Khim., USSR
SO Khimiya Vysokikh Energii (1967), 1(5), 472-9
CODEN: KHVKA0; ISSN: 0023-1193
DT Journal
LA Russian
AB **Optical spectra of the absorption of trapped electrons** in glass-forming alcs. and alc.-water solns. irradiated by γ -rays at -196° were studied. Photolysis with visible light at the wavelength longer than λ_{maximum} causes a shift of the **maximum** of **optical absorption** of the **trapped** electron into the short wave region. The results obtained are accounted for through a localization of electrons in "cavities" of different sizes. Certain theories of the "cavity" are given to interpret the **optical** properties of solvated and **trapped** electrons. 42 references.
- L13 ANSWER 34 OF 59 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1968:73586 CAPLUS
DN 68:73586
TI Position of **optical absorption maximum** for an electron **trapped** in hypothetical glassy ice at 77°K
AU Ershov, B. G.; Makarov, I. E.; Pikaev, A. K.
SO Khimiya Vysokikh Energii (1967), 1(4), 404-5
CODEN: KHVKA0; ISSN: 0023-1193
DT Journal
LA Russian
AB The optical spectra of captured electrons in the mixts. water-ethylene glycol and water-glycerol, γ -irradiated at 77°K ., were studied and the absorption maximum in hypothetical glassy ice was found. The absorbed dose was $4 + 1018$ ev./ml., the dose rate $6.2 + 1015$ ev./ml.-sec. In both mixts., the spectrum of optical absorption had 1 maximum With increasing concentration of the water, the maximum is smoothly shifted to the longwave region. The widening of the optical band of the absorption maximum in aqueous-alc. mixts. in comparison with ice can be explained by a wider set of sizes of cavities in these mixts. The greater are the sizes of the mols. of the medium, the wider is the set of the sizes of the cavities and the wider is the band of optical absorption of solvated or captured electrons. For the same polar substance, the optical band of the electron in the transition from the liquid phase to the glassy one narrows. For glassy ice at 77°K ., it is 0.6-0.7 ev. The presence of a maximum shows that the composition of the nearest surrounding of the electron is proportional to the composition of the mixture This is the difference between these mixts. and ethanol-2-methyltetrahydrofuran glasses for which 2 maximum were found, i.e. for an electron captured in EtOH and for an electron captured in 2-methyltetrahydrofuran.
- L13 ANSWER 35 OF 59 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1964:438955 CAPLUS
DN 61:38955
OREF 61:6753b-d
TI Thermal stability of color centers in a silicate glass
AU Stroud, J. S.
CS Corning Glass Works, Corning, NY
SO Physics and Chemistry of Glasses (1964), 5(3), 71-5
CODEN: PCGLA6; ISSN: 0031-9090

DT Journal
LA Unavailable
AB cf. CA 58, 1008c. A study of the thermal bleaching of the color centers of **optical** absorption produced by ultraviolet and x-ray irradiation on a binary silicate glass showed that between room temperature and 100° the **trapped** electron centers, with an **absorption maximum** of 250 mμ, causing the f1-band and the **trapped** hole centers with **absorption max** . near 620 mμ and 440 mμ, are thermally decomposed to supply some of the electrons that combine with Ce3+ centers. The trapped electron centers causing the f2-band with a **maximum absorption** near 230 mμ were thermally decomposed at 50 and 100° to supply some of the electrons that recombine with the thermally stable Ce3+ centers. Approx. one-quarter of the Ce3+ trapped electron centers and the (Eu3+ plus electron) trapped hole center absorptions were thermally stable up to 450 and 250°, resp. The center formed by the bleaching out of the 2 trapped hole center bands with **absorption max** . near 440 and 620 mμ resulted in an **absorption** band with a **maximum** near 500 mμ that was thermally stable up to 150°.

L13 ANSWER 36 OF 59 SCISEARCH COPYRIGHT 2004 THOMSON ISI on STN DUPLICATE 1
AN 2003:62866 SCISEARCH
GA The Genuine Article (R) Number: 628YF
TI Optical properties of segmented cyano-containing PPV-based chromophore for fluorescent sensing
AU Lee T S (Reprint); Na J; Lee J K; Park W H
CS Chungnam Natl Univ, Organ & Optoelect Mat Lab, Dept Text Engrn, Taejon 305764, South Korea (Reprint); SK Corp, Daeduk Inst Technol, Taejon 305712, South Korea
CYA South Korea
SO OPTICAL MATERIALS, (JAN 2003) Vol. 21, No. 1-3, pp. 429-432.
Publisher: ELSEVIER SCIENCE BV, PO BOX 211, 1000 AE AMSTERDAM, NETHERLANDS.
ISSN: 0925-3467.

DT Article; Journal

LA English

REC Reference Count: 15

ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB **Optical** metal ion responsive properties of segmented cyano-PPV derivative with pyridyl group are reported. The polymer solution in DMF exhibited **absorption maximum** at 346 nm and emission maximum at around 470 nm (excitation wavelength 346 nm). A new absorption was observed at 296 nm by addition of ferric and uranyl ions to the polymer solution presumably due to charge transfer interaction between polymer chain and metal ion. Consecutive fluorescence quenching was induced upon exposure to ferric ion. It is presumed that the metal ion binding leads to produce **trapping** sites for the excitation resulting in fluorescence quenching. (C) 2002 Elsevier Science B.V. All rights reserved.

L13 ANSWER 37 OF 59 SCISEARCH COPYRIGHT 2004 THOMSON ISI on STN DUPLICATE 2
AN 2003:833862 SCISEARCH
GA The Genuine Article (R) Number: 723EZ
TI Optical absorption and luminescence of 14-MeV neutron-irradiated CaF2 single crystals
AU Cooke D W (Reprint); Bennett B L
CS Los Alamos Natl Lab, Div Mat Sci & Technol, MST-8, MS E546, Los Alamos, NM 87545 USA (Reprint); Los Alamos Natl Lab, Div Mat Sci & Technol, Los Alamos, NM 87545 USA
CYA USA
SO JOURNAL OF NUCLEAR MATERIALS, (15 SEP 2003) Vol. 321, No. 2-3, pp. 158-164.
Publisher: ELSEVIER SCIENCE BV, PO BOX 211, 1000 AE AMSTERDAM, NETHERLANDS.
ISSN: 0022-3115.

DT Article; Journal

LA English

REC Reference Count: 16

ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB The effects of 14-MeV neutron irradiation (1.1×10^{19} n/m²) on crystalline CaF₂ have been examined by **optical** absorption and luminescence techniques to evaluate its suitability as a window material for fusion energy applications. For comparison, similar studies were done on unirradiated and X-irradiated samples. It is confirmed that pristine CaF₂ exhibits excellent **optical** transmission in the spectral region 200-1000 nm. X and neutron irradiation induce similar **optical absorption** spectra with **maximum absorption** coefficients approximately 1.6 and 0.8 cm⁻¹, respectively. Thermally stimulated luminescence glow curves are induced by X-ray (11.55 kGy) and neutron exposures; peaks occur at 423, 534, 596 and 479, 550, 605 K, respectively. Thermal annealing experiments show that the major absorption peaks decay in concert with appearance of the first glow peak, which is attributed to an electron **trap**. Thus, the major absorption bands are associated with F and F-aggregate centers. The relative ease with which these centers are produced strongly suggests that CaF₂ is not a good final optic window material for fusion energy applications. (C) 2003 Elsevier B.V. All rights reserved.

L13 ANSWER 59 OF 59 LIFESCI COPYRIGHT 2004 CSA on STN

AN 90:103143 LIFESCI

TI Biophysics of complex systems, model of the interaction of the light-collecting antenna and the reaction centre on transfer of the energy of excitation in the B890 complex of Chromatium minutissimum .

AU Abdurakhmanov, I.A.; Danelius, R.V.; Razzhivin, A.P.

CS Inst. Soil Sci. and Photosyn., U.S.S.R. Acad. Sci. (Moscow Region), Vilnius State Univ., Vilnius, Russia

SO BIOPHYSICS., (1990) vol. 35, no. 1, pp. 108-112.

DT Journal

FS J

LA English

SL English

AB The kinetic curves of the changes in **optical** absorption at 860 nm in the B890 pigment-protein complex of Chromatium minutissimum on excitation at the logwave margin of the absorption band of the light-collecting antenna (930 nm) and close to the **maximum** of the **absorption** band of monomeric bacteriochlorophyll P800 of the reaction centre (800 nm) have been investigated. It is shown that in the first case the absorption band of the dimer of bacteriochlorophyll of the reaction centre bleaches with a time constant τ approximately equals 60 psec and in the second with τ approximately equals 1 psec with absence of signals due to excitation of the bacteriochlorophyll molecules of the antenna. It is concluded that in the B890 complex the reaction centre "almost irreversibly" **traps** the energy of excitation from the antenna.

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